

## ABSTRACT

In order to provide a high-accuracy long-life hydrodynamic bearing not causing oil film breakage in bearing clearances and a disc rotation apparatus using the bearing, when the outside diameter of the herringbone pattern of dynamic pressure generation grooves provided on at least one of the opposed faces of a flange and a thrust plate is designated as  $d_{lo}$ , the inside diameter thereof is designated as  $d_{li}$  and the diameter of the turn-back part thereof is designated as  $d_{lm}$ , the diameter  $d_{lm}$  is selected so that the difference between the diameters  $d_{sy}$  and  $d_{lm}$  becomes 0.05 mm or more and 0.8 mm or less, with the value of the diameter  $d_{lm}$  of the turn-back part being in the range of 1 mm or more and 10 mm or less and being represented by:

$$d_{sy} = \{(d_{li}^2 + d_{lo}^2)/2\}^{1/2},$$

oil or the base oil of grease to be filled in the hydrodynamic bearing has a kinematic viscosity of 4 cSt or more at 40°C of temperature, and one of the outer circumference of a sleeve and the outer circumference of a shaft is secured to a base and the other is secured to a hub rotor.